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**SOURCE**

Newspapers as indicated.

MAGNITOGORSK MODERNIZES, BUT NEEDS NEW MACHINERY

[Numbers in parentheses refer to sources listed at the end.]

In September, the Magnitogorsk Metallurgical Combine imeni Stalin (director, G. Nosov) exceeded the plan for the entire production cycle, achieving the highest production level the combine has ever had. In 8 months the combine has realized more than 186 million rubles in above-plan returns. (1)

The combine has made great strides toward improving utilization of its capacity in an effort to meet the goals announced by Stalin in 1946 for the metallurgical industry of the USSR as a whole. This drive for increased production can be divided into two stages. The first stage consisted of an effort to overcome the disproportion between the operating conditions in mine and metallurgical production, among different stages of the metallurgical cycle, and also between production and transport. The combine's workers electrified railroad transport facilities, enabling them to meet the growing needs of production. The rich sulfide iron ores were utilized to a greater extent. Capacity of the soaking pits in blooming mills was increased, and automatization of openhearth furnaces and rolling mills made it possible for these installations to increase the output of pig iron, steel, and rolled products.

The second stage was considerably more complex than the first. An attempt was made to increase the durability of basic equipment, to intensify technological processes, to increase production quality, and to decrease consumption of raw material, fuel, and other materials. These tasks cannot be completed without further modernization and introduction of new technology.

The following are among the most pressing problems. The combine has itself modernized the out-worn hammers for crushing coking coal, making it possible to attain a finer crushed coal. This achievement, however, does not answer the problem completely. In order to provide a steady supply of finely crushed coal for coking furnaces, the Ministry of the Metallurgical

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Industry should take a hand in delegating the task of producing more modern coal crushers to the scientific research organizations, planning institutions, and machine-building plants.

High-quality coke also depends on the quality of the coal. The Ministry of the Coal Industry, however, has permitted deviations from the quality requirements, with the result that the mixing and storage of coal has become complicated and the uniform quality of coke has been sacrificed. Moreover, the Kuznetsk and Karaganda coal basins supply the combine with coking coal which has a high ash content, despite the fact that coking coal, having an ash content higher than 7 percent, needs concentration. Enriching of the combine's large reserves of lean ores is another urgent problem which is not being given sufficient attention.

Scientific research institutes have been slow in producing a self-fluxing sinter, a problem which is of extreme importance for all metallurgical enterprises. Steps to increase the gas pressure at the charge hole of the blast furnace should increase furnace productivity. The combine's workers have made some effort to organize an industrial check of this new development, but need outside assistance to carry it through. The technical administration of the Ministry of the Metallurgical Industry and scientific research institutes have been definitely cool to this proposal.

Open-hearth workers are faced with the problem of reducing smelting time and thereby increasing steel output. The main shortcoming in the operation of open-hearth furnaces is the unsatisfactory preparation of raw materials, and inefficient and slow charging. A strict continuity is needed in feeding furnaces, and standard charges should be prepared for each melt. Mixing places cannot meet these requirements. The feeding of ore and limestone into charge boxes retards rapid charging of these materials into the furnace. Feeding of ore and limestone by conveyor directly into the working area, eliminating mixing places, should be set up. Accurate preparation for feeding standard charges and scrap into furnaces has become the most urgent problem in increasing steel output. A new system for charging raw materials into open-hearth furnaces and new designs for charging machines, based on continuous operation, should be worked out, primarily by the planning and research institutes of the metallurgical industry.

For more than 15 years, steelworkers in Magnitogorsk and in the Kuznetsk plant have been working on the problem of increasing the size of open-hearth furnaces. Research done in 1947-48 has shown that the steel smelted in large furnaces is at least equal in quality to that smelted in small furnaces. Reconstruction of existing furnaces for greater size is the next problem of importance, and even further, new furnaces should be designed and built for greater size.

In regard to rolled steel production, the increase in the output of rolled steel is often retarded by the deficiencies in dressing the steel. Removal of surface defects by using pneumatic hammers and autogenous welding torches demands greater working area and more workers. Mechanization of steel dressing operations is of prime importance to rolled steel production, another problem to be taken up by the institutes and machine builders.

At the Magnitogorsk Combine, there has been some progress in automatization of installments underneath stock bins in the blast furnaces, automatization of open-hearth operations, and complete automatization of individual rolling mills. The rate of progress in making production processes automatic is not keeping up with the needs of the enterprise, and much is left to be done in this direction. Machines for compressing light scrap in pile-driver shops and electric locomotives for intraplant transport would be of inestimable value to metallurgical production. Machine builders, however, have not even drawn up plans for auxiliary metallurgical machinery.

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For 5 years, the combine has attempted to place an order for production of a mobile car tippie for unloading coal, but has not yet succeeded. The ministry has no designers specializing in this type of machine. The combine turned to the Ural Heavy Machine-Building Plant for technical assistance in designing the machine, but with no success.

The tremendous volume of intraplant railroad freight transport and the specifications of each type of freight demand proper types of rolling stock. There is particular need for large-capacity cars and for cars specially designed for transporting pig iron from pouring machinery, and for transporting sinter, blast-furnace dust, coke, etc. Railroad-car builders are not meeting these needs.

Another of the combine's complaints is the failure of certain enterprises to meet its orders on schedule. In 1945, the combine placed an order with the "Uralsmash" Plant for 44 bevel gears for live rollers of one mill. It has received to date only eight gears and further production has been stopped. There have also been cases where orders, fulfilled on schedule, have been of inferior quality. In April, the combine received from the Novokramatorsk Plant in Elektrostal 22 defective carts for casting molds. The "Elektrosila" Plant also sent defective materials in meeting one of its orders. (2)

At present, 70 percent of the open-hearth furnaces in the combine's first open-earth shop are operating on a uniform schedule and the average length of the melt has been cut by one hour (3).

## SOURCES

1. Kommunist, No 233, 2 Oct 49
2. Pravda, No 277, 4 Oct 49
3. Izvestiya, No 258, 1 Nov 49

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